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(54) Title: **SUPPRESSION OF TRANSPLANT REJECTION**

(57) Abstract: Transplant rejection in an animal is suppressed by administration of an antibody directed at a cell surface antigen selected from the group consisting of CD4, CD8, CD154, LFA-1, CD80, CD86 and ICAM-1, preferably an anti-CD4 antibody, together with a non-cellular protein antigen to generate in the animal a population of regulatory T-lymphocytes; reactivating said population of regulatory T-lymphocytes by further administration to the animal of the non-cellular protein antigen; and transplanting said organ or tissue whilst said population of regulatory T-lymphocytes is activated. Regulatory T cells can be generated ex vivo by culturing T cells with an antibody directed at a cell surface antigen selected from the group consisting of CD4, CD8, CD154, LFA-1, CD80, CD86 and ICAM-1, in the presence of cells that present either alloantigen or a non-cellular protein antigen. Ex vivo generated T-lymphocytes can be used as an alternative method of overcoming transplant rejection or in combination with the in vivo method. A similar approach can be adopted for the treatment of autoimmune conditions.